

Figure S1. Adipocyte glycolytic breakdown occurs before it does in the brain.

- A) Confocal images of Ldh-GFP in the adipose tissue of flies fed either an ND or an HSD for 2 weeks.
- B) Mean Ldh-GFP fluorescent intensity, obtained from Z-stack summation projections of adipose tissue in ND and HSD-fed flies. Student's t-test with Welch's correction. N = each circle represents an individual fly.
- C) Timeline of Ldh reduction in adipose tissue versus the brain on HSD. Ldh is downregulated in adipose tissue prior to its downregulation in the brain.

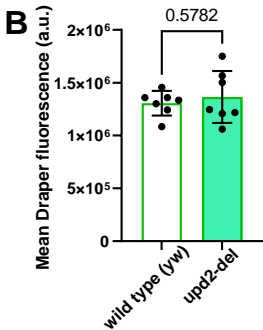
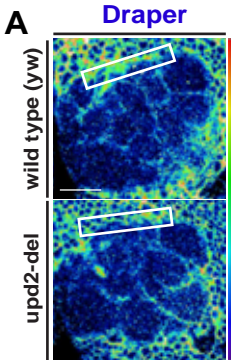


Figure S2. Adipocyte glycolytic breakdown occurs before it does in the brain.

Mean beta-hydroxybutyrate in the hemolymph flies fed either an ND or an HSD for 1 week. Student's t-test with Welch's correction. N = 3 technical replicates of 30 flies/replicate.

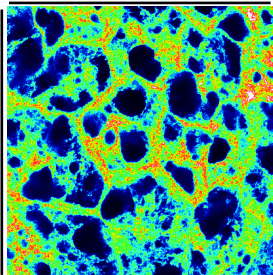
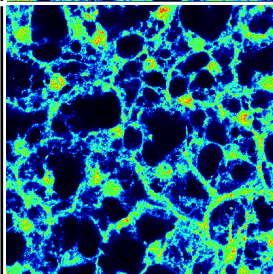
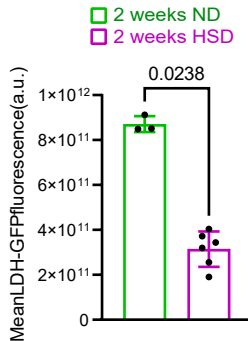
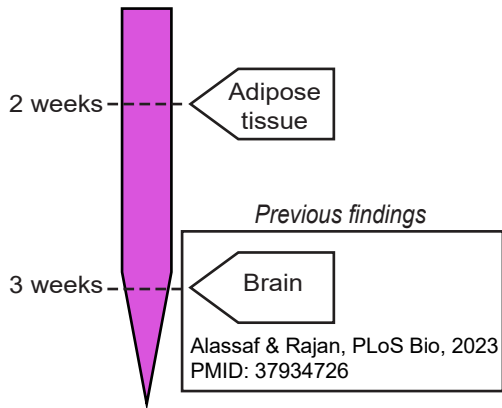
A**Ldh-GFP****2 weeks ND****2 weeks HSD****B****C****Time on HSD
before glycolysis breakdown**

Figure S3. Upd2 does not affect Draper levels in the ensheathing glia.

A) Confocal images of the antennal lobe region of wild type and upd2-deletion flies immunostained with anti-Draper.

B) The mean fluorescent intensity of Draper was measured within a region of interest (white box) that coincided with the location of the ensheathing glia. These measurements were derived from a Z-stack summation projection covering the entire depth of the antennal lobe. Student t-test with Welch's correction. N = each circle represents an individual fly.

Hemolymph β -HB

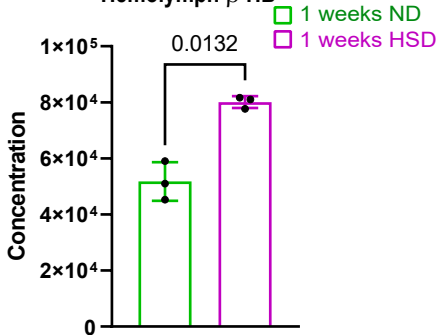
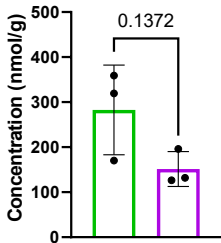


Figure S4. HSD treatment reduces hemolymph PE levels.

- A) The mean concentration of phosphatidylethanolamine (PE) in the hemolymph of flies fed either an ND or a HSD for 2 weeks. N = 3 technical replicates of 30 flies/replicate.
- B) The mean composition of phosphatidylethanolamine (PE) in the hemolymph of flies fed either an ND or a HSD for 2 weeks. N = 3 technical replicates of 30 flies/replicate.

A □ 2 weeks ND
 □ 2 weeks HSD

Hemolymph PE



B □ 2 weeks ND
 □ 2 weeks HSD

Hemolymph PE

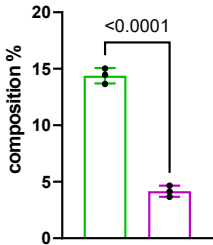


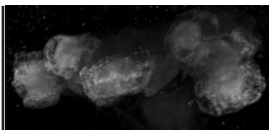
Figure S5. Knocking down ApoB in adipose tissue does not impact insulin levels in the brain.

A) Z-stack summation projections of the insulin-producing cells (IPC) immunostained with anti-Dilp5 of flies expressing either Luciferase-RNAi or ApoB-RNAi specifically in their adipose tissue.

B) Mean fluorescent intensity of Dilp5 derived from a Z-stack summation projection covering the entire depth of the IPCs. Student t-test with Welch's correction. N = each circle represents an individual fly.

ppl (Adipose tissue)-Gal4>
UAS-X

Luc-RNAi



ApoB-RNAi

